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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/736,498

**Applicant(s)**

YAMAZOE, MANABU

**Examiner**

Amara Abdi

**Art Unit**

2624

**Period for Reply** -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 14 July 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-8508)
- 4) ☐ Interview Summary (PTO-413)
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_
- Paper No(s)/Mail Date \_\_\_\_\_

**DETAILED ACTION**

1. Applicant's response to the last Office Action, filed July 14, 2008 has entered and made of record.
2. In view of the Applicant arguments, the rejection of claims 1-9 under U.S.C §112, First Paragraph is expressly withdrawn.

**Remarks**

3. Applicant's arguments filed July 14, 2008 have been fully considered but they are not persuasive.

(a) Applicant argues (page 9, lines 1-9) that Shu defines the difference between the maximum and minimum values of three primary color values, it impossible for Shu to obtain a saturation value corresponding to the first and second color difference values. Furthermore, Applicant point out that the difference between the maximum and minimum values that is computed in Shu is distinct from, and does not suggest, the difference between the first and second color difference values recited in claim 1. The maximum and minimum values in Shu, are color-component values, and are not color-difference values, as recited in claim 1.

In response to Applicant's arguments (page 9, lines 1-9), the Examiner would like to point out that claim language is given its broadest reasonable interpretation. In the instant case, the method of Shu is read the broad claim language calls for "first and second color difference values and obtaining a corresponding saturation value" because the language does not specify any details about the first and second difference values.

Thus any method using the color difference could be read the broad claim; therefore, the method of Shu which uses the difference between the minimum value and a maximum value from among three primary colors RGB could be read the broad claim language calls for "first and second color difference values". Regarding the obtaining of saturation, Shu clearly teaches the obtaining of color saturation (column 1, line 44-46). Thus the specification is not measure of invention. Therefore, limitations contained therein can not be read into the claims for the purpose of avoiding the prior art. *Ir re Sporck*, 55CCPA 743, 386 F.2d 924, 155 USPQ 687 (1968).

(b) Applicant argues (page 9, line 10-13) that Shu does not determine an address of a main lookup table on the basis of the value obtained from a sub-lookup table by a first color difference value and a difference between such first and second color difference values.

In response to Applicant's arguments, as discussed above, Shu teaches the first and second color difference, and obtaining the saturation value. Shu does not explicitly mention the determining of an address of a main lookup table on the basis of the value obtained from a sub-lookup table by a first color difference value and a difference between such first and second color difference values. Taniuchi et al., teaches a color image recording device with color edit and conversion processing, where determining an address of the main lookup table (LUT of fourth color conversion unit) in corresponding with the two color difference differences values ( $a^*$  and  $b^*$ ) (Fig. 1, column 20, line 57-59) on the basis of the value obtained from the sub-lookup table (LUT of the third color conversion unit) by the first color difference value ( $H$ ) (Fig. 1,

column 20, line 48-50) and a difference between the two color difference values (C) (Fig. 1, column 20, line 49-50).

In addition, the KSR states:

"All the claimed elements were known in the prior art and one skilled in the art could have combined the elements as claimed by known methods with no change in their respective functions, and the combination would have yield predictable results to one of ordinary skill in the art at the time of the invention" (*Adapted from Anderson's Black Rock Inc. v. Pavement Salvage Co.*)

All the claim elements are known in Shu and Taniuchi et al. The only difference is the combination of the color conversion method with the method of determining an address of a main lookup table on the basis of the value obtained from a sub-lookup table by a first color difference value and a difference between such first and second color difference values.

Thus, it would have been obvious to one having ordinary skill in the art to use the determining of address of the main look up table as though by Taniuchi et al. with the color conversion method as shown in Shu reference, since the color conversion method could be used in combination with the determining of address of the look up table to achieve the predictable results of performing a color editing operation with amounts of a standardized color specification system to thereby set a color to be converted and a converted color with ease and high accuracy (column 4, line 7-11).

Therefore, the rejection of claims 1 and 7, and their dependent claims is proper and should be sustained.

(c) Applicant argues (page 10, line 19-21) that Kaye's use of color difference values does not, and cannot, remedy the lack of such signals in Shu, as any attempt to use color difference values in Shu in place of the color component values would apparently render the Shu system inoperative.

In response to Applicant's arguments, the Examiner disagrees, because, the method of Kaye is read the broad claim language calls for "first and second color difference values" because the language does not specify any details about the first and second difference values. For instant case, Shu teaches the color conversion method. Shu does not explicitly mention that the sub-lookup table stores an address of the entry in which the first and second color difference values are the same. kaye et al., teaches the storing of address in lookup table of the entry (column 10, line 34-37) in which the tow color difference values are the same (column 5, line 57-59), (the addressing by unique pairs of values corresponding to the incoming R-Y and B-Y is read as the same concept as the tow color difference values are the same).

In addition, the KSR states:

"All the claimed elements were known in the prior art and one skilled in the art could have combined the elements as claimed by known methods with no change in their respective functions, and the combination would have yield predictable results to one of ordinary skill in the art at the time of the invention" (*Adapted from Anderson's Black Rock Inc. v. Pavement Salvage Co.*)

All the claim elements are known in Shu and Kaye references. The only difference is the combination of the color conversion method with the lookup table which

stores the address of the entry in which the first and second color differences values are the same.

Thus, it would have been obvious to one having ordinary skill in the art, to use the storing of the address in lookup table, in which the first and second color differences are the same as though by Kaye et al., with the color conversion method as shown in Shu reference, because the storing of address in lookup table, in which the first and second color differences are the same could be used in combination with the color conversion method to achieve the predictable results of maintaining the composite signal within the pre-defined limits while still insuring that any processing of the color video signals is carried through with a minimum of change to the luminance, hue of saturation of the resulting composite signal (column 1, line 54-62).

Therefore, the rejection of claim 3 is proper and should be sustained.

**Claim Rejections - 35 USC § 103**

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-2, 4, and 7-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shu (US 5,517,335) in view Hongu (US 6,757,427) and Taniuchi et al. (US 5,200,832).

**(1) Regarding claims 1 and 7:**

Shu discloses a color conversion method and an apparatus (column 1, line 44) of inputting the first and second color difference values (column 6, line 44-45), (the first and second difference values are read as the maximum and minimum values) and obtaining a corresponding saturation value (column 1, line 44-46), comprising steps of:

creating a main lookup table (LUT1) which stores saturation value for the color difference values (variable delta) (column 6, line 32-41; and column 7, line 55-57), and sub-lookup table (LUT2) for obtaining a value corresponding to the first color difference (difference between the maximum and minimum values in steps 408 and 410) (column 6, line 43-46), for accessing the main lookup table (column 4, line 23-27, and column 10, line 19-20);

obtaining a saturation value corresponding to the two color difference values (column 5, line 64-65) by accessing the main look-up table (column 4, line 23-27, and column 10, line 19-20).

Shu does not explicitly mention the method, where the first color difference value is equal to or less than the second color difference value; and determining an address of the main lookup table in corresponding with the two color difference differences values on the basis of the value obtained from the sub-lookup table by the first color difference value and a difference between the two color difference values.

**(a) Obviousness in view of Hongu**

Hongu, in analogous environment, teaches an edge enhancement preprocessing



with image region determining function, where the color difference is equal to that a second color difference value of the two color difference values (column 6, line 62-65).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the system of Hongu, where the color difference is equal to that a second color difference value of the two color difference values, in the system of Shu in order to correct the middle color in the boundary portion between a character region and photograph region (column 6, line 3-6).

*(b) Obviousness in view of Taniuchi*

Taniuchi et al., in analogous environment, teaches a color image recording device with color edit and conversion processing, where determining an address of the main lookup table (LUT of fourth color conversion unit) in corresponding with the two color difference differences values ( $a^*$  and  $b^*$ ) (Fig. 1, column 20, line 57-59) on the basis of the value obtained from the sub-lookup table (LUT of the third color conversion unit) by the first color difference value (H) (Fig. 1, column 20, line 48-50) and a difference between the two color difference values (C) (Fig. 1, column 20, line 49-50).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the system of Taniuchi et al., where determining the address of the main lookup table, in the system of Shu in order to performing a color editing operation with amounts of a standardized color specification system to thereby set a color to be converted and a converted color with ease and high accuracy (column 4, line 7-11).

**(2) Regarding claims 2 and 8:**

Shu further discloses the method and an apparatus (column 1, line 44), where the main lookup table has a smaller number of entries than the number of all possible combinations of the two color difference values by utilizing symmetry of the saturation value for the color difference values (column 7, line 45-51), (it is read that by the use of curve, the lookup table will have a smaller number of entries than the number of all possible combinations of the two color difference values, since the curve is symmetric and representing the saturation value and approaching zero in either extreme).

**(3) Regarding claim 4:**

Shu discloses a lookup table for obtaining an output value defined for an input value (column 6, line 12-13), comprising:

a main lookup table (LUT1) adapted to, when a definition of an output value has or is regarded to have symmetry (column 7, line 45-51) for a plurality of input values (column 8, line 36), (it is read that the plurality of pixels have a plurality of input values).

A sub-lookup table (LUT2) (column 6, line 43-46)

Shu does not explicitly mention the storing of an address of an entry in which a first input value and a second input value of the plurality of input values are the same; and wherein the address of the main lookup table is determined on the basis of an address obtained from the sub-lookup table by the first input value being equal or less than the second input value of two arbitrary input values and a difference between the first and second input values, in corresponding with the two arbitrary input values.

(a) Obviousness in view of Kaye:

kaye et al., in analogous environment, teaches a processing for color video signals, where sub-lookup table is adapted to store an address of an entry (column 10, line 34-37) in which a first input value and the second input value of the plurality of input values are the same (column 5, line 57-59), (the addressing by unique pairs of values corresponding to the incoming R-Y and B-Y is read as the same concept as the two color difference values are the same).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the system of kaye et al., where storing the address of the entries in lookup table, in the system of Shu in order to maintain the composite signal within the pre-defined limits while still insuring that any processing of the color video signals is carried through with a minimum of change to the luminance, hue of saturation of the resulting composite signal (column 1, line 54-62).

(b) Obviousness in view of Taniuchi et al.

Taniuchi et al., in analogous environment, teaches a color image recording device with color edit and conversion processing, where the address of the main lookup table (the fourth color conversion unit) is determined on the basis of an address obtained from the sub-lookup table (the third color conversion unit) (column 4, line 51-64), (the output of the third color conversion is an input of the fourth conversion unit) , by the first input value (brightness signal V) being equal or less than the second input value (brightness signal L\*) of two arbitrary input values (column 4, line 63-64) and a

difference between the first and second input values, in corresponding with the two arbitrary input values (C) (Fig. 1, column 20, line 49-50).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the system of Taniuchi et al., where the address of the main lookup table is determined on the basis of the address of the sub-lookup table, in the system of Shu in order to performing a color editing operation with amounts of a standardized color specification system to thereby set a color to be converted and a converted color with ease and high accuracy (column 4, line 7-11).

6. Claims 3 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shu, Hongu and Taniuchi et al., as applied to claims 1 and 7 above, and further in view of Kaye et al. (US 5,089,882).

Shu, Hongu and Taniuchi et al. disclose all the subject matter as described in claims 1 and 7 above.

Shu, Hongu and Taniuchi et al. do not explicitly mention the storing of an address in lookup table of the entry in which the two color difference values are the same.

kaye et al., in analogous environment, teaches a processing for color video signals, where storing the address in lookup table of the entry (column 10, line 34-37) in which the tow color difference values are the same (column 5, line 57-59), (the addressing by unique pairs of values corresponding to the incoming R-Y and B-Y is read as the same concept as the tow color difference values are the same).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the system of kaye et al., where storing the address of the entries in lookup table, in the system of Shu in order to maintain the composite signal within the pre-defined limits while still insuring that any processing of the color video signals is carried through with a minimum of change to the luminance, hue of saturation of the resulting composite signal (column 1, line 54-62).

7. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shu, Hongu and Taniuchi et al., as applied to claim 4 above, and further in view of Metcalfe (US 5,809,181).

Shu, Hongu and Taniuchi et al. disclose all the subject matter as described in claim 4 above.

Shu, Hongu and Taniuchi et al. do not explicitly mention the

Shu, Kaye et al., and Hongu do not explicitly mention the system, where the specific condition includes a color space

Metcalfe, in analogous environment, teaches a color conversion apparatus, where the color conversion is loaded with appropriate output color space primary color lookup table (column 6, line 11-13).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the system of Metcalfe, where lookup table includes a color space, in the system of Shu in order to minimize the storage requirements. For example, assuming that each primary color has 256 (8-bits) possible levels of input, a

lookup table for every combination of R, G, and B would require 16 Mbytes (256x256x256) for each of the CMY and K pass. A large lookup table can be simulated by interpolating between eight points forming a cube around the R, G, B position derived from the non-uniform color space conversion interval (column 6, line 22-28).

8. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shu, Hongu, Taniuchi et al., and Metcalfe, as applied to claim 5 above, and further in view of Suzuki (US 6,650,336).

Shu, Hongu, Taniuchi et al., and Metcalfe disclose all the subject matter as described in claim 5 above.

Shu, Hongu, Taniuchi et al., and Metcalfe do not explicitly mention the system, where the output value includes saturation in a color space determined in advance.

Suzuki, in analogous environment, teaches a color conversion device and a method capable of improving color reproduction, where the output value includes saturation in color space, which is determined based on three-dimensional lookup table (column 3, line 34-40).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the system of Suzuki, where the output value includes saturation value in color space, in the system of Shu in order to provide a color conversion device determining the saturation level of input image data which is in term referred to change an interpolation method to another to improve color reproduction (column 3, line 50-53).

**Conclusion**

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

**Contact Information**

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Amara Abdi whose telephone number is (571)270-1670. The examiner can normally be reached on Monday through Friday 8:00 Am to 4:00 PM E.T..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jingge Wu can be reached on (571) 272-7429. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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